

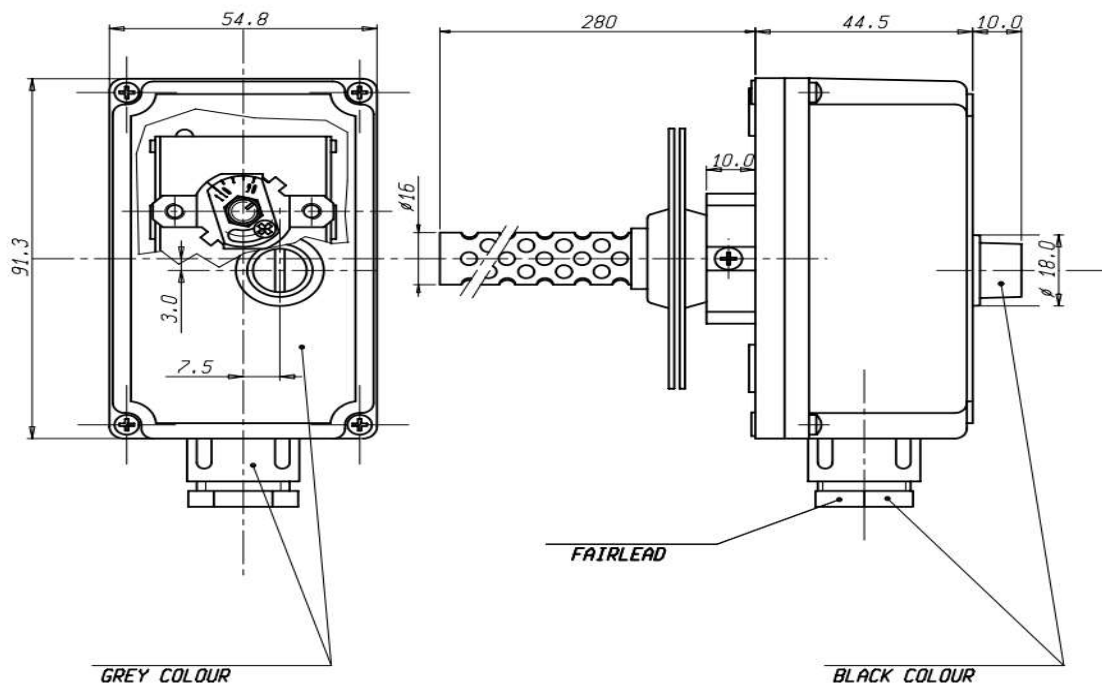
LOCAL MOUNT TEMPERATURE LIMITER SWITCH MANUAL RESET

- Type LTI-20C Manual Rearm

Available Models

TYPE		LTI-20 L280 - C
Adjustable Scale °C		65/85
Fixed Differential °K		15 ±8
Max. Temp Head °C		80
Max. Temp Sensor °C		150
Active Zone Length mm.		65
Min. Insertion Depth mm.		280
Ø Immersors	Brass	16.5
	Inox.	N/A
	Teflon	N/A
Process Connection		Ball Flange
Switch Type		Unipolar (SPDT)
Electrical Rating		C-1 0,5A/250V C-2: 10(2.5)A/250V
Electrical Connection		Faston 6,3 x 0,8 (DIN 46244)
Enclosure Rating		IP40 (DIN 40050)
Cable Intake		M20x1.5

DIMENSION DRAWING



Application

Suited for regulation and temperature control of gases in conducts, furnaces, machinery and other equipment.

Description

The enclosure is composed of a body and cover (both plastic casted).
The enclosure, with an IP 40 (DIN 40 050 rating), holds the switch.
The sealing of the body-cover union is made by 4 screws.

Electrical connections are protected by a cover that prevents accidental contact with the switch while manipulating the temperature control.

A scale, without parallel effect allows an easy temperature set point change.

Additional connection threads are available. Standard mounting is supplied with Ball Flange Connection.
Heating Immersors is Galvanized Steel with holes for maximum performance

Other lengths/materials are available on demand.

The switch is in accord with ROHS

Heating system of the temperature switch is remote bulb, liquid fill.

Heating measurement system is rated by the following organizations:



- Cycle rating: VDE class II (100.000 cycles)
- Electromagnetical Compability (EMC): 80/336/CEE y 93/68/CEE and VDE Class N
- Resistance to current leakage: PTI 250 (KB 250)
- Temperature response time: 1 k/minute

Installation

• Enclosure:

Suited for mounting at dry industrial sites, enclosure is rated at IP40 (DIN 40 050).

Temperature switch can be mounted in any position.

The ambient temperature allowed by the switch is from -25°C a $+80^{\circ}\text{C}$. (T80). (See Table 1)

• Location of the sensing element:

The sensing element should be located in a representative zone of the temperature to be measured, thus isolated from zones affected by exterior elements (like strange air currents, proximity of heating elements...), that could affect the measurement.

A good circulation of the element to be controlled should be guaranteed at the measuring point.

The maximum sensor temperature should not be exceeded.

IMPORTANT: Be sure to check the immersor's depth is equal or greater than the "Min. Insertion Depth mm." as set in the Table no 1.

Fig. 1 shows an exaggerated incorrect mounting where the sensing element does not monitor the temperature correctly.

The mounting should be made using the screw nut, never using the enclosure as the torque transmitter.

If needed, a hydraulic sealing liquid can be used to seal the union.

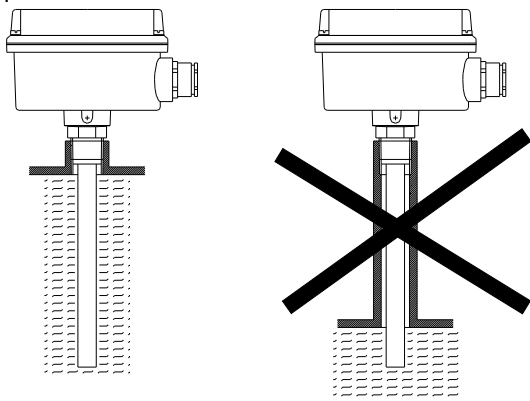


Fig. 1

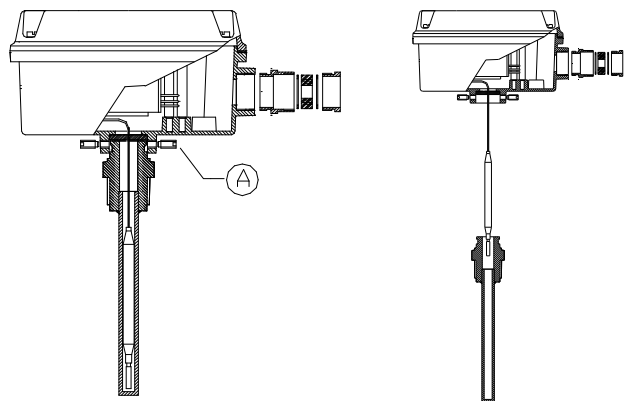


Fig. 2

• Immersor (fig. 2):

Our temperature switches are supplied with an immersor that allows the dismounting of the switch without the need of emptying or lowering the pressure of the tank. To proceed, follow the next steps:

- Unscrew two screws "A" with a screwdriver.
- Extract the enclosure and sensing element carefully

IMPORTANT NOTE:

If the electrical connection don't allow the dismantling, previously follow these steps:

- Dismount the enclosure cover.
- Dismount the cover of the electrical connection.
- Disconnect the electrical cable.

To mount a new temperature switch in the immersor, follow the steps in inverse order, taking special care in pressing the enclosure while tightening the two screws "A" to ensure a correct mounting of the joint.

- **Additional protection wells (Fig. 3):**

Sometimes by protection or design needs, additional thermowells are added to the immersor.

From the point of view of heat transmission, we are incorporating additional barriers that add delays on temperature sensor.

To minimize those delays, heating fluids are added to fill out the empty spaces.

Note:

When filling out those spaces, there should be an empty space left, to ensure that the volume increase when the process maximum temperature is reached do not bend the immersor-sensor element, deformatting the sensing element and damaging, even disabling, the switch. The same result could be obtained if the temperature switch receives shocks.

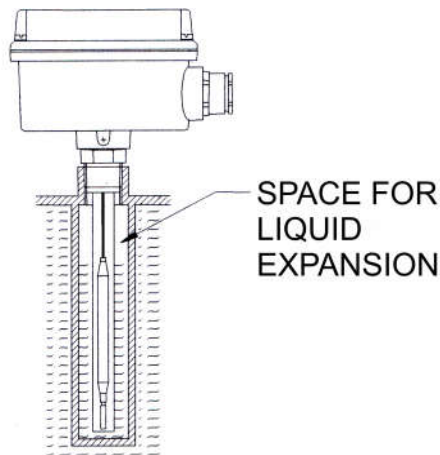


Fig. 3

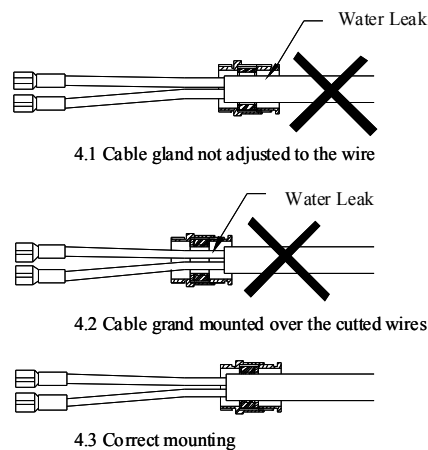


Fig. 4

Electrical wire connection:

Wire orientation:

- When mounting the temperature switch, if rotation of the wire exit is needed, follow the next steps:
- Unscrew two screws "A", with a screwdriver.
- Rotate the enclosure until the desired position is obtained.
- Press the enclosure while tightening the two allen screws "A" to ensure a correct mounting of the joint.

Electrical wire connection:

The threaded union between the cable gland and the enclosure is sealed at factory to ensure the IP 40 rating. If the cable gland is dismantled or changed, a hydraulic sealer should be applied.

To connect the electrical wire follow the next steps:

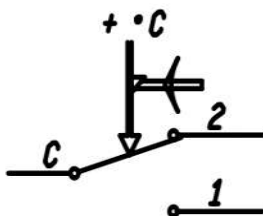
- Dismount the enclosure cover, and the electrical connection cover.
- **WARNING: Check carefully that the wires are not connected with power.**
- Cut off the wire hose (70 mm aprox.), avoiding cuts in the wire isolation, and then insert the bare wire into the faston (6,3 x 0,8 DIN 46 244) with an appropriate tool. There should be enough gap to allow wire extension and avoid an accidental cable release.
- Adapt the rubber joint pre-stamped of 6 mm wide, to the wire hose diameter.
- Mount the wire hose plus washer into the cable gland, verifying that the seal is made over the exterior of the washer, and not over the wired hose. (See fig. 4.2.)
- Connect the faston following the diagram located on the interior of the electrical cover, and then tighten the screw nut while pulling the wire softly.
- Mount the electrical wire cover, and the enclosure cover taking precaution with the correct mounting of the cover-enclosure joint.

Electrical Diagram

The temperature switch uses Single Pole Double Throw Relays (SPDT) with silver contacts 1000 x 1000.

AC Ratings:

- C-1 0,5A/250V
- C-2 10 (2,5)A 250 Vac.



ELECTRICAL DIAGRAM

Operation

Select the desired switching temperatures by turning the graduated scales.

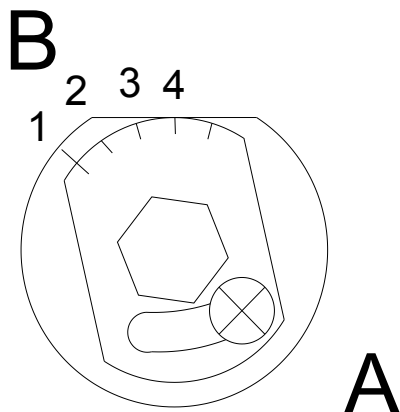
If the actual temperature is inferior to the set point, the circuit will be closed thru the C-1 terminals

As the temperature raises, and when the temperature reaches the set point, then commuter will switch, closing the circuit thru the C-2 terminals, and opening the C-1 circuit.

When the temperature drops a value equal of differential of the switch (ΔT), the commuter will allow by pressing the rearm button, to close the circuit thru the C-1 terminals and opening the C-2 terminals.

To perform the unit reset, unscrew the provided cap and press the reset button.

To adjust the temperature switch remove the front cover, unloose the plate fixing screw (A) and move the plate onto the desired temperature value (B)



B Value	Temperature
1	85
2	77
3	71.5
4	65

The temperature switch is factory calibrated with raising temperatures.

If the temperature switch is going to work with lowering temperatures, the switch point will be the set point minus the differential value.

Special calibrations can be provided equalize the value of the set point and switching point.